Strother, Toni

From: Pooler, Bob
Sent: Wednesday, February 13, 2002 11:07 AM
To: Strother, Toni
Cc: Keating, Mark
Subject: FW: ozone as an antimicrobial agent, crop production aid

-----Original Message-----
From: Michael Herman [mailto:mrherman@hamilton.net]
Sent: Wednesday, February 13, 2002 11:05 AM
To: Pooler, Bob; Kim Burton; Owusu Obandele
Cc: Emily Brown Rosen; info(a)omri.org;
David.Miesbach(a)NDEQ.State.NE.US; Andy Christiansen; Chris Arnold;
Ernie Wilmink; Freddie Lamm
Subject: ozone as an antimicrobial agent, crop production aid

Kim Burton, National Organic Standards Board, Materials Committee Chair
Owusu Obandele, National Organic Standards Board, Crops Committee Chair
Robert Pooler, National Organic Program, USDA

I would like to request that you approve the use of ozone as an antimicrobial agent under the classification 'crop production aid', specifically as it pertains to the maintenance of a subsurface drip irrigation system in an organic production system. As I have looked for an effective and compliant maintenance program, I sense that the subsurface drip irrigation system has not been considered by the organic community. Therefore, I am submitting the following for your review and consideration.

PREVENTIVE MAINTENANCE FOR SUBSURFACE DRIP IRRIGATION

When using subsurface drip irrigation, preventive maintenance is highly recommended simply because one cannot visually inspect emitters, and the major cause of failure is clogging of the emitters.

There are three categories of clogging: physical, chemical and biological. The physical is addressed by a filtering system. The chemical is addressed by acids. The biological is addressed by chlorine. The recommendation by Kansas State University is if the microbiological load is high, a low concentration of 1 to 2 ppm of chlorine should be injected continuously. If the load is not high, a shock treatment of 10 to 30 ppm is recommended.

In our particular case, the source of water is a well and it meets and surpasses the EPA requirement for drinking water. The engineer, Chris Arnold, has recommended, as a preventative measure, to shock treat at the end of the irrigation season. As the National List now stands, chlorine is acceptable as long as it meets the requirement of the Safe Drinking Water Act, which is no more than 4 ppm. Am I to assume that I could continuously inject up to 4 ppm throughout the irrigation season, but I could not inject 10 ppm for 13 minutes at the end of the irrigation season? No one has recommended the use of the other approved crop production aids for cleaning subsurface drip irrigation systems because of the question of their effectiveness. In my search of the Safe Drinking Water Act, I have also discovered that there is an Underground Injection Control Program that is regulated by the states, in our case the Nebraska Department of Environmental Quality, and a subsurface drip irrigation system falls under the UIC program. In addition, chlorine is considered a pesticide and is also under the Chemigation Program. As of yet, I have had no decision from the NDEQ on

the use of chlorine or ozone.

A final ruling by the FDA in June of 2001 now allows the use of ozone as an antimicrobial agent for food treatment, storage and processing. It is considered an alternative to the use of chlorine and chlorine dioxide as an antimicrobial agent. Municipalities are switching from chlorine to ozone for treatment in their drinking water and swimming pools. ('The Key' Water and Air International, Inc.)

Michael R. Herman, The Grain Place, Inc., 1904 North Highway 14, Marquette, NE. 68854, 402-854-3195

Freddie Lamm, Research Agricultural Engineer, KSU Northwest Research-Extension Center, 105 Experiment Farm Road, Colby, Kansas USA 67701-1697, Phone: 785-462-6281 FAX: 785-462-2315, E-Mail: flamm@oznet.ksu.edu, SDI Website: http://www.oznet.ksu.edu/sdi/

Chris Arnold, T-Systems International, 12180 East Iowa Dr., Aurora, CO. 80012
970-378-0247, Mobile 303-882-0209, Carnold@t-tape.com

T-Systems International, 7545 Carroll Road, San Diego, Ca. 92121-2401, 800-765-1860
www.t-tape.com

Nebraska Department of Environmental Quality, David Miesbach, David.miesbach@NDEQ.State.NE.US, 402-471-2186

Ernie Wilmink, ?The Key? Water and Air International, Inc., West Highway 91,
Lindsay, Ne. 68644, 800-539-6220, consultant in Custom Ozone Technology
keywater@worldnet.att.net

Strother, Toni

From: Kim.Burton@jmsmucker.com%inter2 [Kim.Burton@jmsmucker.com]
Sent: Wednesday, February 13, 2002 11:52 AM
To: mrherman@hamilton.net%inter2
Cc: Pooler, Bob; Strother, Toni; ebr@omri.org%inter2; obandele@su.jags.subr.edu%inter2
Subject: Re: ozone as an antimicrobial agent, crop production aid

Dear Mr. Herman,
There is currently a TAP review in process for the use of ozone gas for weed control. If the TAP is not too far along in the process we will request that your use for Ozone as a antimicrobial agent also be considered.

Kim

Michael Herman <mrherman@hamilton.net> 02/13/2002 08:05 AM Please respond to mrherman

To: Kim Burton <Kim.Burton@jmsmucker.com>, Owusu Obandele <obandele@subr.edu>, Robert Pooler <Bob.Pooler@usda.gov>
cc: Emily Brown Rosen <ebr@omri.org>, "info@omri.org" <info@omri.org>, "David.Miesbach@NDEQ.State.NE.US" <David.Miesbach@NDEQ.State.NE.US>, Andy Christiansen <achristiansen1@unl.edu>, Chris Arnold <Carnold@t-tape.com>, Ernie Wilmink <keywater@worldnet.att.net>, Freddie Lamm <flamm@oznet.ksu.edu>
Subject: ozone as an antimicrobial agent, crop production aid

Kim Burton, National Organic Standards Board, Materials Committee Chair
Owusu Obandele, National Organic Standards Board, Crops Committee Chair
Robert Pooler, National Organic Program, USDA

I would like to request that you approve the use of ozone as an antimicrobial agent under the classification 'crop production aid', specifically as it pertains to the maintenance of a subsurface drip irrigation system in an organic production system. As I have looked for an effective and compliant maintenance program, I sense that the subsurface drip irrigation system has not been considered by the organic community. Therefore, I am submitting the following for your review and consideration.

PREVENTIVE MAINTENANCE FOR SUBSURFACE DRIP IRRIGATION

When using subsurface drip irrigation, preventive maintenance is highly recommended simply because one cannot visually inspect emitters, and the major cause of failure is clogging of the emitters.

There are three categories of clogging: physical, chemical and biological. The physical is addressed by a filtering system. The chemical is addressed by acids. The biological is addressed by chlorine. The recommendation by Kansas State University is if the microbiological load is high, a low concentration of 1 to 2 ppm of chlorine should be injected continuously. If the load is not high, a shock treatment of 10 to 30 ppm is recommended.

In our particular case, the source of water is a well and it meets and surpasses the EPA requirement for drinking water. The engineer, Chris Arnold, has recommended, as a preventative measure, to shock treat at the end of the irrigation season. As the National List now stands, chlorine is acceptable as long as it meets the requirement of the Safe Drinking Water Act, which is no more than 4 ppm. Am I to assume that I could continuously inject up to 4 ppm throughout the irrigation season, but I could not inject 10 ppm for 13 minutes at the end of the irrigation season? No one has recommended the use of the other approved crop production aids for cleaning subsurface drip irrigation systems because of the question of their effectiveness. In my search of the Safe Drinking Water Act, I have also discovered that there is an Underground Injection Control Program that is regulated by the states, in our case the Nebraska Department of Environmental Quality, and a subsurface drip irrigation system falls under the UIC program. In addition, chlorine is considered a pesticide and is also under the Chemigation Program. As of yet, I have had no decision from the NDEQ on the use of chlorine or ozone.

A final ruling by the FDA in June of 2001 now allows the use of ozone as an antimicrobial agent for food treatment, storage and processing. It is considered an alternative to the use of chlorine and chlorine dioxide as an antimicrobial agent. Municipalities are switching from chlorine to ozone for treatment in their drinking water and swimming pools. ('The Key' Water and Air International, Inc.)

Michael R. Herman, The Grain Place, Inc., 1904 North Highway 14, Marquette, NE. 68854, 402-854-3195

Freddie Lamm, Research Agricultural Engineer, KSU Northwest Research-Extension Center, 105 Experiment Farm Road, Colby, Kansas USA 67701-1697, Phone: 785-462-6281 FAX: 785-462-2315, E-Mail: flamm@oznet.ksu.edu, SDI Website: http://www.oznet.ksu.edu/sdi/

Chris Arnold, T-Systems International, 12180 East Iowa Dr., Aurora, CO 80012
970-378-0247, Mobile 303-882-0209, Carnold@t-tape.com

T-Systems International, 7545 Carroll Road, San Diego, Ca. 92121-2401, 800-765-1860
www.t-tape.com

Nebraska Department of Environmental Quality, David Miesbach, David.miesbach@NDEQ.State.NE.US, 402-471-2186

Ernie Wilmink, 'The Key' Water and Air International, Inc., West Highway 91,
Lindsay, Ne. 68644, 800-539-6220, consultant in Custom Ozone Technology
keywater@worldnet.att.net